GEOGRAPHIC SCHOOL BULLETINS

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VOL. XXXV, NO. 7, NOVEMBER 12, 1956 . . . *To Know This World, Its Life*

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THUR VALLEY spreads a green carpet of farms below the snow-streaked Alps in eastern Switzerland. Above, hobnails claw at vertical rock as this human fly scales a pinnacle

JEAN AND FRANC SHOR, NATIONAL GEOGRAPHIC STAFF; WERNER JUD, ABOVE

tion of thousands of power stations in the 20th century gave the country an abundance of cheap hydroelectric power. Electricity now runs almost the entire railroad system. It also supplies industrial plants which absorb half the nation's workers, and lights nearly every Swiss home, no matter how remote.

With the railroads came thousands of tourists—sight-seers and sportsmen—who found Swiss hospitality an art. The "spare room" has blossomed into nearly 7,000 hotels with 169,000 beds and an international reputation for the finest innkeeping. Among hotel men everywhere, Swiss training is considered the graduate school of the trade. Tourism is the biggest industry in Switzerland.

In an effort to feed 5,000,000 Swiss, more than 1,000 square miles were added to the nation's sparse farming lands during World War II, although nearly half

GEORGE PICKOW, THREE LIONS

TRIUMPHANT CHILDREN return from fir-coated heights with a prize Christmas tree

the food supply still is imported. The most prosperous farms and many of the largest cities lie on the fertile midlands between the Jura Mountains, which serve as the boundary between France and Switzerland, and the Alps. From this lake-dotted plain come condensed milk, milk chocolate, fruits, the famous Swiss cheeses, and meat. About one-fourth of the Swiss are farmers. The terrain favors dairying and grazing more than crop farming.

Well known among Switzerland's many manufactured articles are its watches. A growing heavy industry produces some of the world's best generators (page 76), Diesel engines, and railway cars.

Politically, Switzerland's geography has been helpful. Located in the heart of Europe, sharing boundaries with France, Germany, Italy, and Austria, the mountain nation has nevertheless remained neutral in all wars since 1815. Powerful neighbors surrounding it have used landlocked Switzerland as a convenient meeting ground during conflicts.

UMI

JEAN AND FRANC SHOR, NATIONAL GEOGRAPHIC STAFF

Swiss teacher at work; beside Lake of Brienz she reads to excursioning pupils

Switzerland TRIUMPHS OVER NATURE

SWITZERLAND is like the farmhouse on hardscrabble hill. Enticing views of more favored lands open out on every side, but no one deserts the old homestead. After all, it *is* home. Besides, a little hard work will spruce it up and force a living for the growing family from rocky acres. Not only that, the spare room can be rented and a neat penny earned from outlanders who want to come up and look at the views.

This, then, is Switzerland—a place where an industrious people have turned geographic adversity into economic assets, where man has triumphed over nature. The Alps, central Europe's highest mountains, cover two-thirds of the country. They offer few possibilities for farming and are notably poor in minerals. Their glacier-ridden heights wall off valley lands from each other (see cover).

But the coming of the locomotive and the telegraph licked the problems of transportation and communication. Switzerland was among the first ten nations to establish railroads. Today it claims one of the world's densest systems, with more than 6,000 miles of track in a country half the size of Maine. This is almost as much track mileage as crisscrosses all New England. And today, nearly two miles of highway match every mile of rail.

Switzerland has no oil resources and very little coal; but rushing mountain streams and waterfalls are plentiful. Harnessing these waterways and construc-

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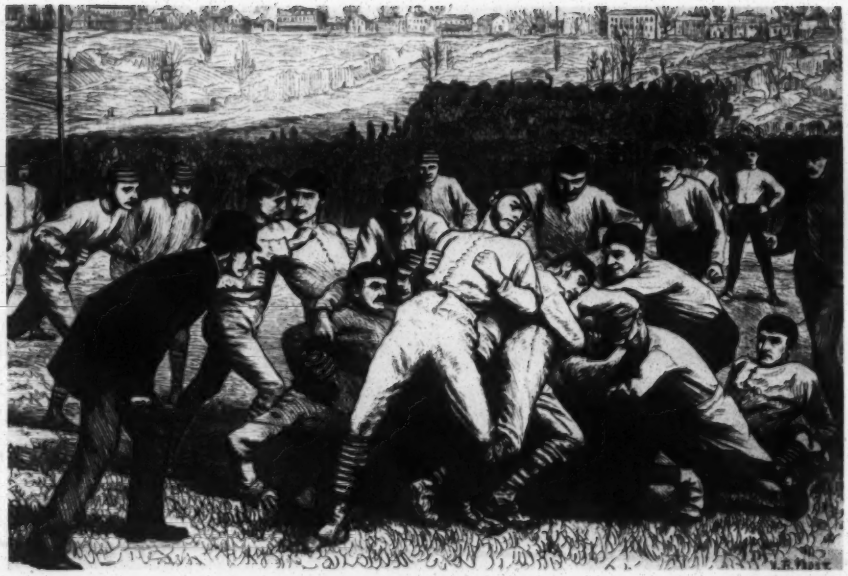


HARPER'S WEEKLY

"A Friendlie Kind Of Fyghte"

TO the disappointment of fans, the Yale-Princeton football game of Thanksgiving Day, 1879, (above) ended in a draw. *Harper's Weekly* reported that the contest "had been free from any serious accidents, and foot-ball men declared it to be the hardest-fought battle of many seasons."

"Many seasons" is right. In 1879 football was celebrating its 10th anniversary as an intercollegiate sport. It had been a haphazard excuse for class riots on Yale and Harvard campuses for more than a century. For at least 500 years English and Scottish townsmen had booted an inflated bladder through village streets in what an observer called a "friendlie kind of fyghte." It had been ceremoniously played by 27 men on a side in Renaissance Italy, which revised the idea from the Romans, who got it from ancient Sparta.

In various versions football spans the modern world. Soccer, wildly popular in Europe, has been carried to remote places by colonists and soldiers. But the idea of carrying the ball as well as kicking it seems to go back to the Spartan game, harpaston. When a student at England's Rugby School defied soccer rules by running with the ball, in 1823, he was reverting to an older form of the game. His action inspired the rules for Rugby, antecedent of American football.

Rutgers beat Princeton in the first American intercollegiate game in 1869, with 25 men on a side. Players could catch the ball for a free kick, could bat it with fists. Today many Australians play a rough and intricate kind of football with those same rules. In 1882, Walter Camp ruled that a team must advance a certain yardage in three downs. Canadian football still uses three downs. Irish football may owe features to a Gaelic game that predates Christianity.

Whether played by Eskimos, Luzon hillmen, Indonesians, Kikuyu tribesmen, or Oklahoma, football has a common aspect. It draws throngs outdoors, some to bruise themselves in action, some to yell themselves hoarse.—E.P.

NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER

BICYCLE TRAFFIC chokes a busy downtown intersection in Bern, the Republic's capital

But Switzerland, with a strong heritage of independence and militant democracy that goes back to the days of William Tell, does not let continued neutrality depend on its neighbors' say-so. The Swiss people are divided into four language groups—German, French, Italian, and Romansch—but they stand as one in defense of their country. They are fond of saying Switzerland does not *have* an army, but *is* an army. Every able-bodied man has a gun he knows how to use.

The nation's ideal of exact democratic equality was illustrated for Franc Shor, National Geographic Magazine assistant editor, during an interview in Bern, the capital. Looking at his watch, the gentleman with whom Mr. Shor was talking said, "Excuse me, or I'll miss my bus. Come out with me and we'll talk while I wait."

So the interview continued in a street queue, as the Vice President of Switzerland lined up with his fellow citizens for a bus ride home.—◎

National Geographic References: ***Map*** —"Western Europe," (paper 50¢; fabric, $1.00). ***Magazines***—October, 1956, "Surprising Switzerland," (school price 55¢); June, 1955, "Switzerland's Enchanted Val d'Hérens," (75¢); August, 1950, "Switzerland Guards the Roof of Europe," (75¢).

NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER

HYDRAULIC TURBINE WHEEL gets its final grinding at Schaffhausen, industrial city on the Rhine

Devils Tower

YOU come upon it in the northeastern corner of Wyoming where the Black Hills level off into plains. Suddenly the even land is rent by a solitary, massive tower of rock, almost shocking in its impact. This is Devils Tower, a weird volcanic pillar rising like a nubbin of the underworld through the gentle soil. In 1906, 50 years ago, it became our first national monument, one of nature's wondrous legacies to be preserved by law.

National monuments were set up to supplement national parks already in existence. They differ from parks in a number of ways. They safeguard scientific, cultural, and historic sites as well as features of nature like those the national parks preserve. Moreover, the President can simply proclaim a monument. Congress must vote to establish a park.

Devils Tower, soaring 857 feet above the parking circle, rises 1,267 feet above the Belle Fourche River, flowing near by. Geologists debate the exact type of upheaval that caused the monolith. Certainly erosion has given it its present shape, leaving Devils Tower standing alone on the softly rolling countryside. Encircled by majestic stands of ponderosa pine, it seems itself like the petrified stump of some gigantic prehistoric tree. Prairie falcons nest among the tops of spectacular pentagonal flutings that average ten feet in diameter, while chipmunks scurry through the sage on the flat acre-and-a-half top. A colony of prairie dogs (above), in the shadow of the tower, is an added attraction for nearly 100,000 visitors that stream to see the monument each year.

Today there are 83 national monuments spread across the United States and Alaska. Though Devils Tower National Monument covers less than two square miles, these areas are not necessarily small. Katmai, in Alaska, comprises 4214 square miles of volcanic terrain—the largest area administered by the National Park Service.—

BATES LITTLEHALES, NATIONAL GEOGRAPHIC STAFF, ABOVE; RALPH GRAY, NATIONAL GEOGRAPHIC STAFF

UMI

Since then, the brief, dramatic history of recent Antarctic exploration has unfolded. On the once blank map of a continent as large as Europe and Australia combined are inked the names of mountains, land masses, and seas. Paul Siple himself was to return a few years later as a member of Byrd's personal staff during the famed explorer's second expedition to the white continent. He was to become a veteran geographer and explorer, an authority on problems of survival at extreme temperatures. This autumn, as the bleak sun rises on Antarctica's five-month day, the former Eagle Scout is southbound for his sixth expedition there, deputy now to Byrd, who is in charge of United States Antarctic Programs for the International Geophysical Year.

This time the ex-Boy Scout has a successor. Once more, an Eagle Scout will gaze awe-struck from the decks of an icebreaker, glimpsing for the first time ice leviathans that loom out of grey Antarctic mists. Eighteen-year-old Richard Lee Chappell, of Eggertsville, New York, was chosen, like Siple, from competing Scouts throughout the nation. When finalists gathered in New York last June to be interviewed, Dr. Siple himself was on the selection committee, ready with an especially warm handshake for the new junior scientific aide to the expedition.

ANDREW H. BROWN, NATIONAL GEOGRAPHIC STAFF

ANTARCTIC LIFELINE is this stream of supplies swinging off the *Glacier* at McMurdo Sound

Chappell's life during the 18 months he will spend at Little America will be markedly different from Dr. Siple's first Antarctic experience. Scientific and technical developments of nearly three decades are blazing trails into the ice continent and will transform living conditions for the men staffing IGY bases there. Clothing tailored by science will better resist the sub-zero cold. Giant aircraft will do heavy work, while small planes will often relieve faithful dog teams. Helicopters will be on call for emergency rescues. The Navy's newest icebreaker, "Glacier", will crash through frozen barriers with 21,000 horsepower force, where 28 years earlier, the "City of New York" steered a perilous course with only 200 horsepower and a fraction of the displacement tonnage. At the fifth Little America, Chappell will compile data in prefab oil-heated buildings, use a 6000-volume library, and go to the movies in leisure time.

Despite detailed planning and every device modern science has contributed toward safety and smooth operation, one factor remains ominously unchanged. The white continent still threatens its assailants with the old weapon—weather. In Byrd's own words, "Antarctica still plays for keeps."—J.A.

UMI

Boy Scout Of Little America

HIGH above the white wilderness of Antarctica throb the powerful engines of a Douglas C-124 Globemaster. It is ferrying supplies—food, fuel, and even smaller disassembled aircraft—for a group of human beings who soon will settle in huts at Earth's most southerly spot, a geographical point where meridians converge and a compass needle wags aimlessly. The tiny American base will sit squarely atop the South Pole where the mercury can plummet to 100 below zero. It is a vital link in an 11-nation chain of bases set up for operations of the International Geophysical Year (1957-58), man's boldest research to date on the sciences of earth and atmosphere (see "All-out Assault on Antarctica," *National Geographic Magazine*, August, 1956).

The man in charge is no newcomer to Antarctica. When the wooden hull of Rear Admiral Richard E. Byrd's "City of New York" forged paths through ice in the Ross Sea in 1929, a 19-year-old Eagle Scout stood on its deck. Paul A. Siple had been chosen from 600,000 Boy Scouts of America to accompany the expedition. He learned to whip dog teams into action and helped build the first Little America. In charge of biological and zoological work, he set up a taxidermy station and collected specimens of penguins and seals for the American Museum of Natural History.

WIDE WORLD

SIPLE'S DISCIPLE. Dr. Paul Siple, right, went to Little America in 1929 as a Boy Scout. Now he leads a polar party, as Dick Chappell, left, becomes Antarctica's second scout

exchange district. Policemen blow whistles, newsboys shout headlines, and smartly dressed shop girls clack through arcades on their way to work.

I often wandered through those arcades during lunch hour. They honeycomb the central blocks of the shopping district—well-lighted walkways lined with expensive little shops and cafes. On rainy evenings in Melbourne's cold, bleak winter, I found I could get from Myers Department Store (largest in the Southern Hemisphere) to Flinders Street Station without going outdoors except to cross streets.

Of course crossing a Melbourne street can be quite an adventure. The city fathers, more than a century ago, laid out thoroughfares 99 feet wide. They're a blessing to Melbourne's heavy flow of cars, but a curse to the pedestrian, especially if he's an American used to right-hand traffic. Many times I looked the wrong way and stepped off the curb only to receive a horn blast and a withering look from a bus driver.

Interspersed between these broad avenues are "little" streets—narrow lanes that split each block in two and give trucks a chance to unload behind stores and warehouses. Collins Street has its Little Collins Street, Bourke Street (below) is backed by Little Bourke, and so on. Melbourne's Chinatown lies along one of the little streets. One of its residents used to pad through our newspaper office twice a week selling peanuts and ginger.

Lunch time in Melbourne is a delight. I either ordered what was considered a "modest" Australian meal of steak covered with two eggs for about fifty cents, or tested a European cuisine in one of the restaurants run by New Australians who flooded into the city in the postwar immigration boom.

Melburnians built their city on commerce, gathering wool and grain from the wide continent at their backs, shipping it to the world. Now industrial smoke hangs over the Yarra.

Evenings, when I jolted home in a European-style railroad carriage, I rode with a broad assortment of people—scientists and riveters, fashion models and wharf laborers, wool buyers and insurance salesmen. And if it was Friday night, every one of us, rich and poor (there are very few really rich or really poor), would be planning a week end outdoors.

Like all Australia, Melbourne loves its holidays—and no city's streets are emptier when one rolls around. On spring and summer week ends beaches are jammed, cricket players dot innumerable parks, youngsters wait patiently for a turn at the many suburban tennis courts. Every holiday is a sports festival in Melbourne—a small preview of the Olympics.

AUSTRALIAN NEWS AND INFORMATION BUREAU

BOURKE STREET, lined with stores, leads to State Parliament buildings, St. Patrick's Cathedral

EDWARDS PARK *lived in Melbourne five years after being sent out to the Pacific as a fighter pilot during World War II. His feature writing for leading newspapers there and, after his home-coming, in the United States, led to appointment to the* Geographic School Bulletins *staff. Before the war, Mr. Park taught at Proctor Academy in his native New Hampshire. His Melbourne story, below, appears as number three of the current city series.*

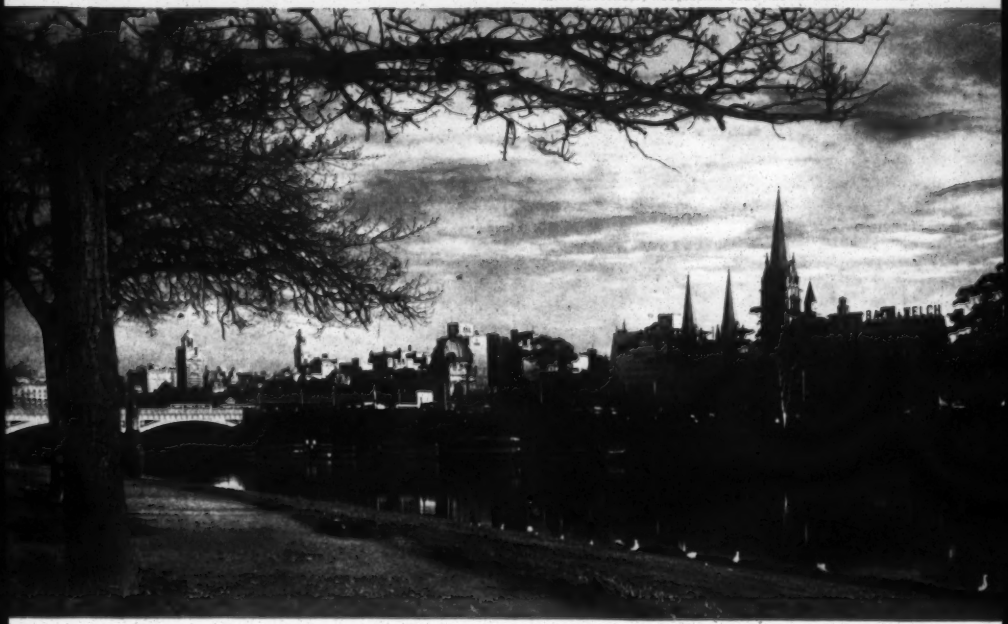
MELBOURNE

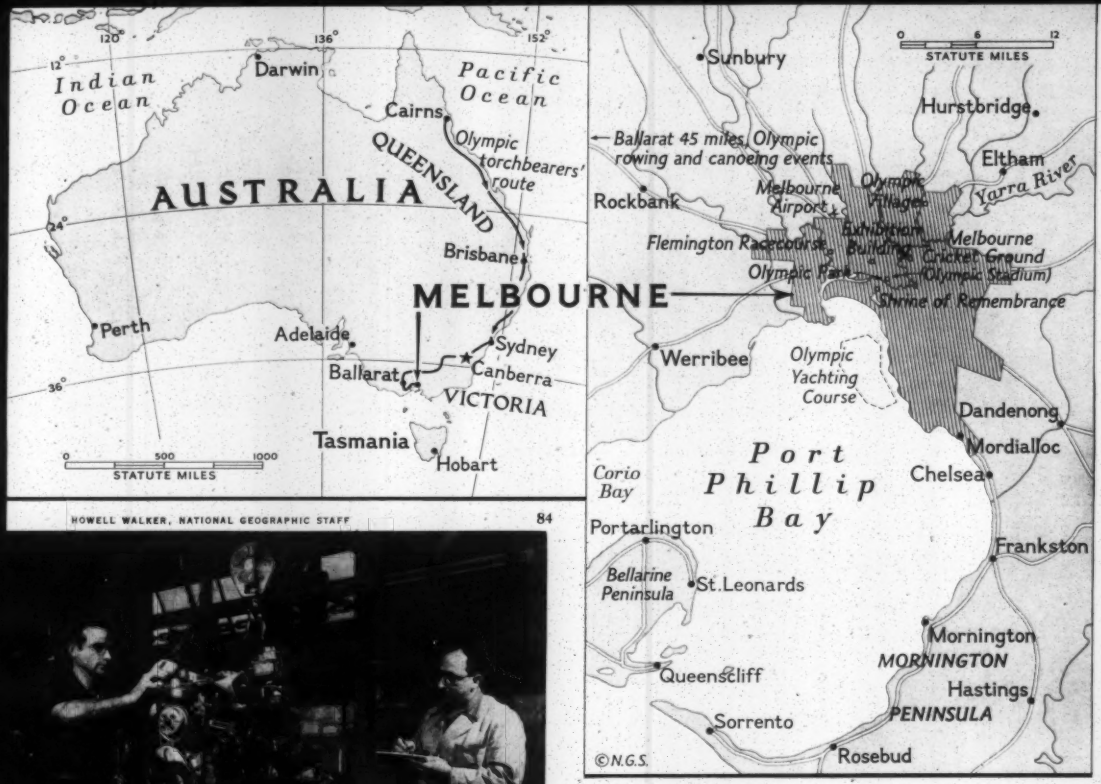
AS you read this, some 100,000 sight-seers are pouring into Melbourne for the Olympic Games that begin next week. Those that arrive by airliner get a good idea of Australia's second city. They see a clump of tall office buildings surrounded by a green belt of park lands and recreation areas. Wave after wave of low-roofed suburbs spread out from the business section like layers of an onion, sprawling around the broad northern tip of Port Phillip Bay and stretching toward the blue Dandenong Mountains to the north.

It's a good view of Melbourne. But there's a prettier one from the excursion boats that ply the muddy little Yarra River winding past the city's heart. At one magic spot (below) the water catches and reflects the spires of St. Paul's Cathedral and the towers of neighboring office buildings. I've seen that view many times, gliding downstream while a man with an accordion led the singing and my two small boys dragged hands in the water.

There are other aspects of Melbourne I know better—commuter trains clattering into Flinders Street Station, the rush of morning traffic across Princes Street Bridge, the rumble of the streetcar taking me up Elizabeth Street to the newspaper office. In my mind's eye, I still see the city coming to life. Trucks loaded with fresh vegetables clash gears as they struggle through traffic to Victoria Market. Tweedy doctors hunt for parking places near their offices on tree-lined Collins Street (Melbourne's Champs Elysées, Piccadilly, and Fifth Avenue all in one). Homburged financiers pay off their taxis in the stock

CLIFF BOTTOMLEY, AUSTRALIAN NEWS AND INFORMATION BUREAU





HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF 84

AUSTRALIA'S OWN CAR, the Holden, takes shape in a Melbourne factory. On the map, black line shows path of Olympic torch runners. Melbourne is the youngest and southernmost city to hold the Games

MELBOURNE GROWS UP

"THIS will be the place for a village," wrote explorer John Batman after standing on the banks of the Yarra Yarra in 1835. Today the "village" is capital of the State of Victoria, covers 310 square miles, and holds 1,600,000 energetic people. In Australia, only Sydney is bigger.

For years the two eastern cities have gibed at each other in good-natured rivalry. Sydney citizens note the solid, conservative architecture of Melbourne's old government buildings (until Canberra was built, the city was Australia's seat of government) and describe Melbourne as "British."

It's true that when Melbourne tourists set sail for England on one of the big white liners that call at the port, they speak of "going home."

Yet wherever Melburnians gather they talk of pioneering still going on in their own continent—oil searches, uranium strikes, irrigation projects. The vast exciting land never seems far from Melbourne's restless streets.—E.P.